



20080808 08/26/02

	A	B	C	D	E	F	G
1	Effect of various factors on the recovery of sucralose in crystallization schemes						
2			1 Recrystallization		3 Recrystallizations		
3	Purge of Impurities prior to Crystallization		None	50%	None	50%	75%
4			Sucralose Recovery				
5		1st Crystallizer	35%	43%	35%	43%	50%
6		1st Recrystallizer	37%	45%	38%	46%	52%
7		2nd Recrystallizer			52%	57%	59%
8		3rd Recrystallizer			58%	59%	60%
9			Sucralose Flow				
10							
11	Total feed to system		100	100	100	100	100
12	1st Crystallizer						
13		Total Feed	128	131	140	146	150
14		Crystals Produced	45	57	49	63	75
15		Mother Liquor	83	74	91	83	75
16	1st Recrystallizer						
17		Total Feed	45	57	64	86	105
18		Crystals Produced	17	26	24	40	55
19		Mother Liquor	28	31	40	46	50
20	2nd Recrystallizer						
21		Total Feed			31	51	71
22		Crystals Produced			16	29	42
23		Mother Liquor			15	22	30
24	3rd Recrystallizer						
25		Total Feed			16	29	42
26		Crystals Produced			9	17	25
27		Mother Liquor			7	12	17
28	Overall recovery of sucralose		17%	26%	9%	17%	25%
29				155%		186%	
30			Impurity Flow				
31	Total feed to system		100	50	100	50	25
32	1st Crystallizer						
33		Total Feed	110	55	111	56	28
34		Impurities in Crystals	11	5	11	6	3
35		Mother Liquor	99	49	100	50	25
36	1st Recrystallizer						
37		Total Feed	11	5	12	6	3
38		Impurities in Crystals	1	1	1	1	0
39		Mother Liquor	10	5	11	6	3
40	2nd Recrystallizer						
41		Total Feed			1	1	0
42		Impurities in Crystals			0	0	0
43		Mother Liquor			1	1	0
44	3rd Recrystallizer						
45		Total Feed			0	0	0
46		Impurities in Crystals			0	0	0
47		Mother Liquor			0	0	0
48	Overall Impurity Removal		98.90%	98.90%	99.99%	99.99%	99.99%
49			Impurity Level in each Crystallizer				
50		Feed	50.00%	33.33%	50.00%	33.33%	20.00%
51		1st Crystallizer	46.13%	29.53%	44.32%	27.56%	15.62%
52		1st Recrystallizer	19.66%	8.82%	16.22%	6.72%	2.86%
53		2nd Recrystallizer			4.21%	1.30%	0.47%
54		3rd Recrystallizer			0.84%	0.23%	0.08%
55		Base Yield					

Figure 1



	A	B	C	D	E	F
1	Effect of various factors on the recovery of sucralose in crystallization					
2	schemes w/ Recrystallization of 1st Crystallizer Mother Liquor					
3	Impurity Purge Prior to Crystallization	None	50%	75%		
4						
5	1st Crystallizer	Sucralose Recovery				
6	1st Recrystallizer	40%	49%	54%		
7	2nd Recrystallizer	54%	58%	59%		
8	3rd Recrystallizer	59%	60%	60%		
9	1st m/l Recrystallization	60%	60%	60%		
10		35%	43%	49%		
11	Total feed to system	Sucralose Flow				
12	1st Crystallizer	100	100	100		
13	Total Feed	189	207	221		
14	Crystals Produced	76	100	119		
15	Mother Liquor	113	106	102		
16	1st Recrystallizer					
17	Total Feed	113	106	102		
18	Crystals Produced	40	46	50		
19	Mother Liquor	73	61	52		
20	2nd Recrystallizer					
21	Total Feed	107	144	173		
22	Crystals Produced	58	83	102		
23	Mother Liquor	49	61	71		
24	3rd Recrystallizer					
25	Total Feed	76	110	134		
26	Crystals Produced	45	65	80		
27	Mother Liquor	31	44	54		
28	1st ML Recrystallizer					
29	Total Feed	45	65	80		
30	Crystals Produced	27	39	48		
31	Mother Liquor	18	26	32		
32	Overall recovery of sucralose	27%	39%	48%		
33		Impurity Flow				
34	Total feed to system	100	50	25		
35	1st Crystallizer					
36	Total Feed	123	62	31		
37	Crystals Produced	12	6	3		
38	Mother Liquor	111	56	28		
39	1st Recrystallizer					
40	Total Feed	111	56	28		
41	Crystals Produced	11	6	3		
42	Mother Liquor	100	50	25		
43	2nd Recrystallizer					
44	Total Feed					
45	Crystals Produced	14	7	3		
46	Mother Liquor	1	1	0		
47	3rd Recrystallizer	12	6	3		
48	Total Feed					
49	Crystals Produced	2	1	0		
50	Mother Liquor	0	0	0		
51	1st ML Recrystallizer	1	1	0		
52	Total Feed					
53	Crystals Produced	0	0	0		
54	Mother Liquor	0	0	0		
55	m/l	0	0	0		
56		Impurity Level in each Crystallizer				
57	Feed	50.00%	33.33%	20.00%		
58	1st Crystallizer	39.56%	23.00%	12.24%		
59	1st ML Recrystallizer	49.64%	34.30%	21.39%		
60	1st Recrystallizer	11.34%	4.53%	1.94%		
61	2nd Recrystallizer	1.94%	0.68%	0.28%		
62	3rd Recrystallizer	0.33%	0.12%	0.05%		

Figure 2

INVENTORS: CATANI ET AL.
 TITLE: PROCESS FOR IMPROVING
 SUCRALOSE PURITY AND YIELD
 ATTY. DOCKET NO. 15117.0090
 SHEET 3 OF 12



	A	B	C	D	E	F	G	H	I	J	K
1	Effect of required purity on yield and the improvements seen with impurity pre-purge										
2				one recrystallization		three recrystallizations		five recrystallizations		five recrystallizations and re-crop	
3				Sucralose Recovery							
4	Purge of Impurities prior to Crystallization	None	50%	None	50%	None	50%	None	50%	None	50%
5	1st Crystallizer	36%	44%	36%	45%	37%	45%	38%	47%		
6	1st Recrystallizer	43%	51%	45%	53%	45%	53%	47%	55%		
7	2nd Recrystallizer			52%	57%	53%	58%	55%	58%		
8	3rd Recrystallizer			57%	59%	58%	59%	58%	59%		
9	4th Recrystallizer					60%	60%	59%	60%		
10	5th Recrystallizer					60%	60%	60%	60%		
11	1st Re-Crop							35%	43%		
12	Purity	80.08%	92.36%	97.59%	99.31%	99.83%	99.95%	99.87%	99.96%		
13	Overall Yield	19%	29%	12%	21%	10%	19%	18%	32%		
14	Yield Improvement w/ purge		150%		178%		184%		180%		
15		one recrystallization		three recrystallizations		five recrystallizations		five recrystallizations and re-crop			
16	Purge of Impurities prior to Crystallization	None	50%	None	50%	None	50%	None	50%	None	50%
17				Sucralose Flow							
18	Total feed to system	100	100	100	100	100	100	100	100		
19	1st Crystallizer										
20	Total Feed	126	127	138	143	141	147	206	224		
21	Crystals Produced	45	56	50	64	51	66	79	106		
22	Mother Liquor	81	71	88	79	90	81	127	119		
23	1st Recrystallizer										
24	Total Feed	45	56	69	91	75	101	117	162		
25	Crystals Produced	19	29	31	48	34	54	55	88		
26	Mother Liquor	26	27	38	43	41	47	61	73		
27	2nd Recrystallizer										
28	Total Feed			40	63	50	82	83	135		
29	Crystals Produced			21	36	27	47	45	79		
30	Mother Liquor			19	27	23	35	38	56		
31	3rd Recrystallizer										
32	Total Feed			21	36	39	69	66	115		
33	Crystals Produced			12	21	22	41	38	68		
34	Mother Liquor			9	15	16	28	28	46		
35	4th Recrystallizer										
36	Total Feed					29	54	50	90		
37	Crystals Produced					17	32	30	54		
38	Mother Liquor					12	21	21	36		
39	5th Recrystallizer										
40	Total Feed					17	32	30	54		
41	Crystals Produced					10	19	18	32		
42	Mother Liquor					7	13	12	21		
43	1st Re-crop Recrystallizer										
44	Total Feed							127	119		
45	Crystals Produced							45	51		
46	Mother Liquor							82	68		
47	Overall recovery of sucralose	19%	29%	12%	21%	10%	19%	18%	32%		
48			150%		178%		184%		180%		

Figure 3a

20090908 082200T

INVENTORS: CATANI ET AL.
 TITLE: PROCESS FOR IMPROVING
 SUCRALOSE PURITY AND YIELD
 ATTY. DOCKET No. 15117.0090
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	A	B	C	D	E	F	G	H	I	J	K
				one recrystallization		three recrystallizations		five recrystallizations		five recrystallizations and re-crop	
				None	50%	None	50%	None	50%	None	50%
				Impurity Flow							
49											
50			Purge of Impurities prior to Crystallization								
51											
52			Total feed to system	100	50	100	50	100	50	100	50
53			1st Crystallizer								
54			Total Feed	119	60	125	62	125	62	156	78
55			Impurities in Crystals	24	12	25	12	25	12	31	16
56			Mother Liquor	95	48	100	50	100	50	125	62
57			1st Recrystallizer								
58			Total Feed	24	12	31	15	31	16	39	20
59			Impurities in Crystals	5	2	6	3	6	3	8	4
60			Mother Liquor	19	10	25	12	25	12	31	16
61			2nd Recrystallizer								
62			Total Feed			7	4	8	4	10	5
63			Impurities in Crystals			1	1	2	1	2	1
64			Mother Liquor			6	3	6	3	8	4
65			3rd Recrystallizer								
66			Total Feed			1	1	2	1	2	1
67			Impurities in Crystals			0	0	0	0	0	0
68			Mother Liquor			1	1	2	1	2	1
69			4th Recrystallizer								
70			Total Feed					0	0	1	0
71			Impurities in Crystals					0	0	0	0
72			Mother Liquor					0	0	0	0
73			5th Recrystallizer								
74			Total Feed					0	0	0	0
75			Impurities in Crystals					0	0	0	0
76			Mother Liquor					0	0	0	0
77			1st recrop								
78			Total Feed							125	62
79			Impurities in Crystals							25	12
80			Mother Liquor							100	50
81			Overall Impurity Removal	95.238%	95.238%	99.707%	99.707%	99.982%	99.982%	99.977%	99.977%
82				one recrystallization		three recrystallizations		five recrystallizations		five recrystallizations and re-crop	
83			Purge of Impurities prior to Crystallization	None	50%	None	50%	None	50%	None	50%
84				Impurity Level in each Crystallizer							
85			Feed	50.00%	33.33%	50.00%	33.33%	50.00%	33.33%	50.00%	33.33%
86			1st Crystallizer	48.64%	31.85%	47.38%	30.36%	46.99%	29.81%	43.15%	25.84%
87			1st Recrystallizer	34.67%	17.50%	30.75%	14.49%	29.40%	13.40%	25.07%	10.76%
88			2nd Recrystallizer			15.49%	5.53%	13.39%	4.55%	10.50%	3.48%
89			3rd Recrystallizer			6.56%	2.01%	4.75%	1.38%	3.52%	1.04%
90			4th Recrystallizer					0.52%	0.14%	1.51%	0.43%
91			5th Recrystallizer					0.17%	0.05%	0.75%	0.21%
92			recrop feed							49.65%	34.51%
93			Base Yield	60%							
94			Effect Factor	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
95			1st Crystallizer	36%	44%	36%	45%	37%	45%	38%	47%
96			1st Recrystallizer	43%	51%	45%	53%	45%	53%	47%	55%
97			2nd Recrystallizer			52%	57%	53%	58%	55%	58%
98			3rd Recrystallizer			57%	59%	58%	59%	58%	59%
99			4th Recrystallizer					60%	60%	59%	60%
100			5th Recrystallizer					60%	60%	60%	60%
101			recrop feed							35%	43%

Figure 3b

200909-0622600F

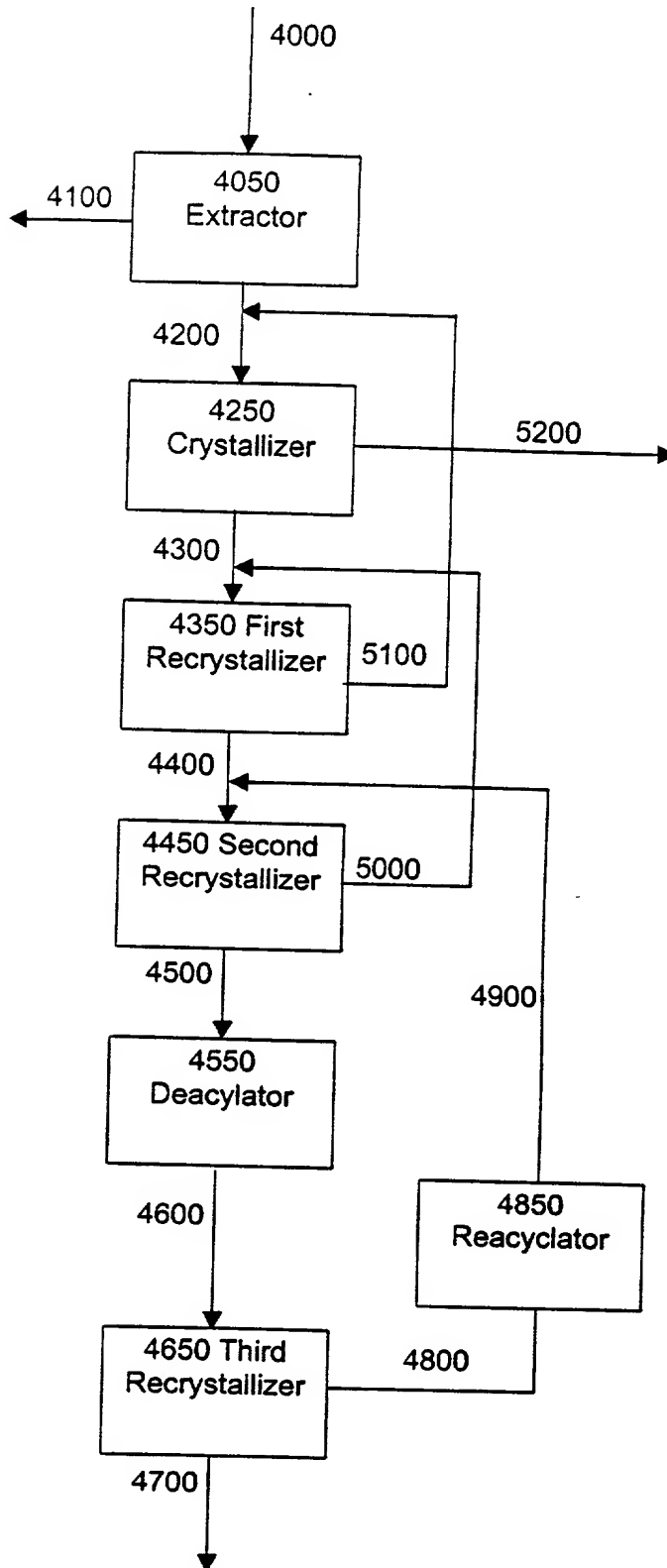


Figure 8

208880-0822001

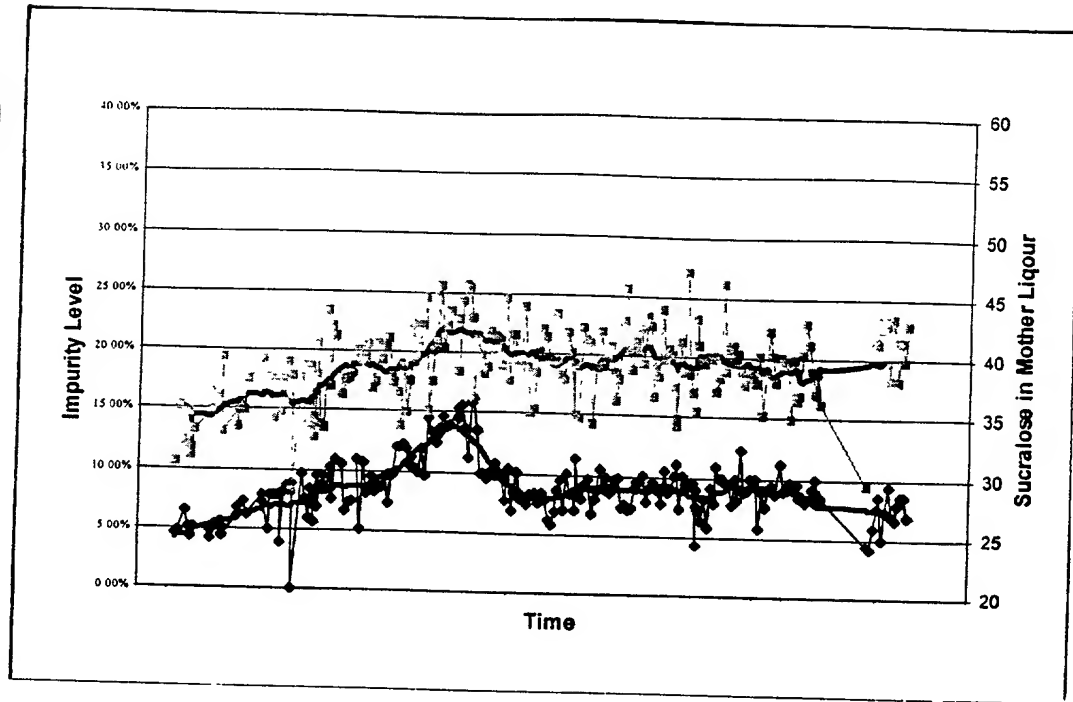


Figure 10a

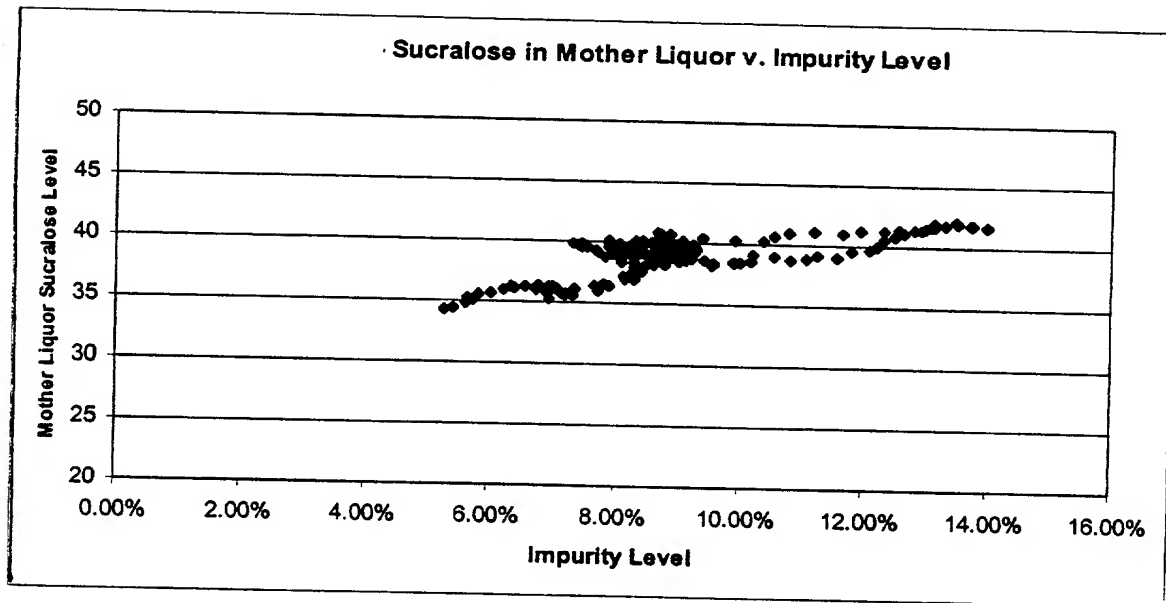


Figure 10b

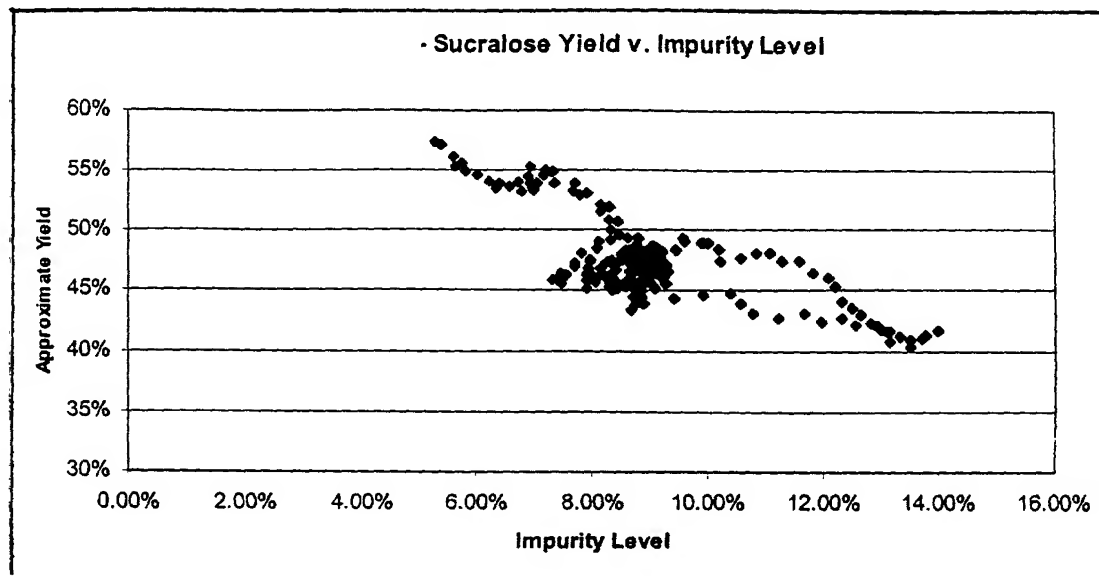


Figure 10c

209080-082200T